

# The Recognition of Emotions in Music and Landscapes: Extending Contour Theory

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**Abstract** While inanimate objects can neither *experience* nor *express* emotions, in principle they can be *expressive of* emotions. In particular, music is a paradigmatic example of something expressive of emotions that surely cannot feel anything at all. The *Contour theory* accounts for music expressiveness in terms of those resemblances that hold between its external and perceivable properties (i.e., *its contour*) and the typical contour of human emotional behavior. Provided that some critical aspects are emended – notably, the stress on the perception of *similarity* instead of the more plausible hypothesis that the listener perceives *manifestations that are similar* – we are inclined to endorse contour theory. In particular, we share its basic idea that expressive properties are *perceived*. Although other kinds of processes – high-level conceptual inferences, imagination – sometimes characterize our encounters with music, still perception constitutes the standard process underlying the detection of expressiveness. Moreover, we propose to extend contour theory to visual arts. Taking into consideration, as a case study, depicted landscapes, we observe that they frequently cannot but express emotions such as joy, sadness, liveliness or melancholy. The fact that pictures, unlike music, lack any temporal dimension is a *prima facie* reason for doubting the extendibility of contour theory’s conceptual arsenal to them. Nevertheless, while being obviously unable to behave somehow, we claim that depicted landscapes can perfectly convey *dynamic* information. If this is the case, the extension of the notion of contour to visuals art via the stress on the notion of dynamism would represent a second interesting revision of contour theory.

**Keywords** Emotional expressiveness · Contour theory · Perception of emotions · Perceptual properties · Landscapes

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\*This is an entirely co-authored paper. However, Marta Benenti is especially responsible for sections about landscape and visual features, while Cristina Meini mostly focussed on music and psychological issues.

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## 1 Introduction

There is quite broad agreement about the fact that human and non-human animals can both *experience* and *express* emotions. This means that most animals can feel affective states and that they make such states manifest by means of behaviors, actions, gestures, vocal expressions, that can be intentional or involuntary. However, we also usually agree that, in principle, inanimate objects can *be expressive of* emotions, or manifest them. We happen to find ourselves in front of a *sad* landscape, we choose a color because it is *lively*, a certain outfit because it is *cheerful*, we find a sunset *melancholy*, and a piece of music *joyful*. Also the fact that we tend to make linguistic attributions of expressiveness to inanimate objects in our everyday speech can reasonably be taken as a symptom of some ongoing experience that needs to be accounted for.<sup>1</sup>

Despite examples can be easily found in everyday experiences and attributions to both natural objects and artefacts, it is undeniable that works of art are among the best candidates to be considered expressive. In particular, there is a widespread agreement that pure music (i.e., music without lyrics, titles or a programme which would convey an explicit but theoretically uninteresting linguistic meaning), despite being unable to *feel* emotions can nonetheless *be expressive of* them.<sup>2</sup> The philosophical and psychological debate about the fact that listeners cannot but perceive a sonata as melancholy, despite being aware that it doesn't feel any melancholy, has taken so far several and often diverging paths. We will not be able to offer here any comprehensive overview about it, but we will refer to some of the main claims and theories that animate the discussion.

## 2 The Contour Theory

One of the most credited theories aiming to account for the experience of music expressive of emotions is the contour theory. Abstracting from its various versions, the contour theory essentially accounts for expressiveness of music in terms of those resemblances that hold between its contour (say, the external, superficial and perceivable properties) and the typical contour of human emotional expressions (for two classical accounts, see Kivy 1989; Davies 1994). In short: music behaves as we do when we express our felt emotions.

Two dimensions of the musical contour are particularly relevant. First, some musical features sound like a human moved voice (Kivy 1989). An acute, stable sound, brilliant and well articulated in its temporal development tends to be perceived as a joyful voice, while a sound full of dissonances is typically perceived as a vocal manifestation of

<sup>1</sup> It has been argued that the use of *adjectives* belonging to the semantic field of emotions and affective states to describe inanimate objects is just an example of metaphor (e.g., Goodman 1976 and Zangwill 2011. See also Wollheim 1993; Scruton 1997; Peacocke 2009 for further discussions). However, we will set aside the discussion concerning the use of language in expressive attributions, to focus on the fact that we tend to make such attributions in order to capture some experience.

<sup>2</sup> Peter Kivy (1980) notoriously drew a distinction between “express” an emotion as the outcome of some occurring internal, felt state, and “being expressive of” an emotion, arguing that someone (and above all something) can be expressive of an emotion without necessarily expressing it. An analogous distinction has been endorsed by Jenefer Robinson (2005).

anguish. Much more than the timbre, it is the melodic contour that resembles the prosody of language and, more broadly, the prosody of vocal expressions.<sup>3</sup> The most frequently cited example is Monteverdi's *Lasciatemi morire*, from *Il lamento di Arianna*, where (independently of the word meaning) the descending contour cannot but evoke the despair of someone seeking suicide.

Second, some features of the contour, such as melody, rhythmic cadence, agogics, and so on, resemble visible aspects of human behavior, like gestures and bodily movements (Kivy 1989; Davies 1994, 2010).

According to Kivy and Davies, expressiveness is a perceivable component of pieces of music as well as sounds, pitches, rhythm etc., and amounts to perceptual (more specifically, auditory) gestalt properties, rather than to the sum of merely perceptual features. This view is also shared by authors that would not recognize themselves as contour theorists.

Susanne Langer, for instance, despite coming from a different philosophical tradition – in particular, she has defended a symbolic conception of musical expressiveness – talked about music as instantiating “dynamic forms” and “models” of feelings. According to her view, music never crystallizes feelings; on the contrary, it always symbolizes their dynamic aspects (Langer 1959).

Langer's philosophical language recalls important intuitions expressed in a rather different domain of research. The developmental psychologist and psychoanalyst Daniel Stern individuated in the musical gestaltic structure the essence of what he has named *Forms of vitality*, a sort of proto-emotions exchanged in emotionally-charged situations such as infant-caregiver interactions (Stern 2010). Forms of vitality are dynamic structures whose nature is very close to contours and characterized, when expressed in a well attuned personal relationship, by a harmonious form – a *beautiful* form, we are inclined to say. The “musical nature” of vitality forms comes to light from their linguistic qualification: *crescendo*, *diminuendo*, *staccato*, *legato*, *vibrato*, and so on. Forms are conceived as *Gestalten* composed out of five elements - movement, time, space, force and goal-directedness/dynamicity – i.e., paradigmatically musical dimensions. Importantly, “vitality contours do not reflect the categorical content of an experience, but rather the manner in which it is performed and the feeling that directs the action” (Stern 2000, p. 86).

Admittedly, the relationship between vitality forms and emotions is elusive. Forms of vitality are dynamic qualities and not specific of emotions. A particularly explosive way one can stand up on a chair may display the vitality form of anger. But this does not imply that every time such form is displayed, the emotion of anger is actually felt by anyone. Moreover, forms of vitality are continuous, not episodic as paradigmatic emotions are. Nevertheless, we cannot but believe that such forms are instantiated with a particular vividness during

<sup>3</sup> Juslin and Laukka (2003) reviewed and compared 104 empirical studies of vocal emotional expression (concerning anger, fear, happiness, sadness, and love-tenderness) and 41 studies of music performance purported to vehiculate the same emotions. On the whole, their meta-analysis revealed significant similarities between the two channels, concerning not only the accuracy of emotional communication, but also the patterns of acoustic cues used to communicate each specific emotion. These data are consistent with what the authors call *Spencers' Law*. According to Spencer (1857), the vocal and musical expressions of emotions are intimately related because the characteristics of both are influenced by the physiological processes related to specific emotions.

emotional episodes, and thus their perception rather reliably signals an emotional state, or at least a mood.

We suggest to interpret this agreement between quite distant traditions and perspectives as revealing something common to the experiences of expressive objects. These authors' views converge indeed on (at least part of) their *phenomenal character*, i.e., the way it is like to undergo such experiences. To account for the phenomenal character of expressive experience implies to account for its being affective and perceptual at once.

### 3 Resemblances

As suggested, contour theory claims that *resemblances* play a fundamental role in our experience of expressive music: accordingly, we experience a piece of music as expressive thanks to the resemblances that we can recognize between perceivable constitutive properties of music, and certain properties that are typical of emotions. According to Peter Kivy indeed: “We hear [musical sounds] as human utterances, and perceive the features of these utterances as structurally similar to our own voices when we express our own sadness in speech” (Kivy 1980, p. 51). And analogously Davies writes that “Music is naturally expressive because the dynamic character of music is experienced as significantly similar to human behavior expressive of emotion” (Davies 2005a, p. 132).

Concerning the kind of emotional properties that makes the resemblance relation possible, a worth noting divide exists between contour theorists and other perspectives. On the one hand, it has been claimed that music resembles *felt emotions*, that is, when we hear a piece of music “as being expressive of emotion E”, we “hear the music as sounding like the way E feels; [...] So the sense in which you hear the emotion *in* the music – the sense in which it is an audible property of the music – is that you perceive a likeness between the music and the experience of the emotion” (Budd 1995, p. 136, where Budd draws on and discusses Schopenhauer's and Pratt's (namely, see Pratt 1931) views on the matter). Analogously, Susan Langer has claimed that expressive music represents<sup>4</sup> the general form of emotions and, more generally our inner life (Langer 1959).

Some criticisms have been put forward against this conception of resemblance. In particular, Sam Trivedi argued that Budd's view not only loses the link to our ordinary concept of *expressiveness* as an external manifestation, but also ends up with a merely causal explanation rather than accounting for what it means to be expressive for an inanimate thing (Trivedi 2001). In short, even if it is plausible to find similarities connecting music and certain feeling components of emotions, this is not what makes music *expressive* of that emotion. Resemblances alone are not enough to establish Budd's view. As clearly stated by Paul Noordhof: “A resemblance, however strong, is not sufficient to explain how something is heard as expressing that which it resembles. At best, resemblance makes something appear expressive if it resembles something which is expressive” (Noordhof 2008, p. 332). Expressiveness requires to be accounted

<sup>4</sup> For convincing arguments against the hypothesis that music either *represents* emotions, or is a *metaphor* for them, see (Davies 2005a).

for as something that is manifest and recognizable. Accordingly, as said earlier, contour theorists insist that the invoked resemblance holds between the *perceptual structure of music*, say, its profile, and the *perceptual profile of emotion manifestations* - rather than emotions as internal psychological states. If, as we suspect, Trivedi's and Noordhof's criticism obtains, then the term of the resemblance has to be found in those components of emotions that are manifest and perceivable, namely what Stephen Davies has named "emotion characteristics in appearance" (Davies 2005b).

However, even endorsing this view, still two issues are worth noticing that emerge from an analysis of the contour theory.

The first problem with resemblance has to do with the priority of expressiveness compared to other possible terms of resemblance and appears to be two-faced. One could indeed argue that a piece of music, or a passage, resembles a dialogue, a fight, a journey, a series of events, the fury of the elements, and so on. Moreover, why the numerous differences that can be seized between the audible contour of a piece of music and typical emotion manifestations should not undermine the emergence of expressiveness (this doubt also has been raised by Noordhof 2008)? The existence of a resemblance as it is, seems not to constitute a sufficient explanation for the fact that a piece of music is experienced as expressive. Contour theorists need to explain why, among the several plausible resemblances that may exist between music and expressions, those with emotional expressions should be more salient.

Second, and more importantly, it does not seem that, when experiencing expressive music, we necessarily perceive any resemblance at all. It can be true that sometimes we notice resemblances between certain musical tones and typically expressive tones of voice, but this does not amount to say that when we experience a piece of music as melancholy we necessarily experience it as resembling a melancholy behavior. Things might rather work the other way round, that is, in virtue of the expressiveness of music, we might be led to compare it to an expressive behavior and find out the similarities. Perceivable resemblances seem not to be necessary conditions to experience musical expressiveness.

To reply to both issues, evolutionary arguments have been often put forward, paradigmatically by Peter Kivy (who retracted them later) and Stephen Davies. In what follows we will appeal to some of them, in order to see whether they could actually strengthen contour theory's perspective.

In order to answer the first question (Why the typical, perceivable structure of human expressions should be more salient than other possible terms of the resemblance?) the contour theorist can resort to evolutionary explanations, jointly with some psychological and anthropological data about human expression and recognition of emotions. Since Darwin (1871), basic emotions are taken to have typical facial, bodily and vocal expressions, which conspecifics are able to detect rapidly and automatically. Such ability is not surprising from an evolutionary point of view, as a highly social species like ours gains extensive selective advantages from being able to recognize others' emotions. Following this tradition, Paul Ekman conducted an extensive and cross-cultural empirical research collecting a huge amount of data coming from different populations and contexts (Ekman 1972, 1992), while Simon Baron-Cohen (2005) postulated the existence of *The Emotion Detector* (TED), a computational mechanism responsible for the detection of basic emotional expressions. TED is taken to be a multimodal system,

triggered by various kinds of heterogeneous stimuli, such as facial expressions, vocal intonation and touch. In some sense, we could say that TED is a *vitality form detector* (Stern 2010). TED is not different from other domain-specific mechanisms assumed to handle rapidly and efficaciously with the social world, such as mechanisms that, faced with self-propelled stimuli with a precise direction (Baron-Cohen 1995; Castelli 2006; Gergely and Csibra 2003), attribute to them mental attitudes such as beliefs, goals and desires. In other words, TED would be one of the components of the mental architecture underlying the human tendency to adopt an *intentional stance* (Dennett 1987). If this is true, we should admit that not only self-propelled stimuli, eye-like stimuli and so on, but also forms of vitality possess a high adaptive value.

Contour theorists can thus appeal to such researches to support their view.<sup>5</sup> They can ground it in evolution and give reasons for the fact that, among the similarities which we could pick up when listening to a piece of music, those which have expressive behavioral manifestations as one of their terms are more likely to be recognized than others.

The Darwinian stance provides then some good explanations for the priority of the recognition of objects' features that resemble human expressions. Nevertheless, this is not enough to settle the second issue, say, the claim that when we experience expressive characters we experience *a resemblance*. The main objection to this assumption stems from the phenomenology of our experiences: we happen to experience a piece of music as joyful, even if we do not recognize any resemblance linking the musical structure with typical human emotional expressions. Thus, the perception of resemblance would follow from – rather than cause – the perception of expressiveness.

Evolutionary explanations are once again helpful and have been explicitly endorsed by Kivy himself (Kivy 1989 and, in a more sceptical attitude, 2002). Indeed, Kivy claims, the perception of the invoked resemblance that is maintained to explain our experience of a piece of music as expressive need not be conscious. Rather it is supposed to lie and be seized at an unconscious level as the remains of an evolutionarily favorable mechanism. To be brief, for our ancestors it was probably convenient, for the sake of survival, to run away when hearing a noise that sounded *as threatening as* the one produced by a truly threatening animal. For contemporary people, who live in a world in which dangerous sounds coexist with music, the same ancient mechanism selected for its efficacy in protecting from the danger would be recruited for a second, new function. (For an overview on the various theories about the purported evolutionary origins of music, see Cross and Morley 2010).

Moreover, and as a further argument in favor of such explanations, it is only by endorsing such an automatic-subconscious hypothesis that it is possible to account for the empirical evidence attesting a significant level of competence in infants, who are rather skilled in unconsciously detecting basic musical emotions. And this mechanism is meant to explain our tendency to animate nature and objects in general.

Still, even accepting that we naturally tend to animate and attribute emotions to objects furnishing our surroundings, two considerations are worth doing. First of all, unlike what happens when we take a twisted branch for a snake and react as if it were

<sup>5</sup> Inspired by Ekman's research programme on affect programs, Davies, s. (2011) examined many empirical studies purported to show a cross-cultural capacity to recognize emotions in music. Although most of these data turn out to be affected by methodologically problems (especially as regards to researchers comparing populations such as British native students and students having Indian origins but raised in ... England!), still some convincing evidence exists - see, e.g., Patel (2008), for a careful analysis of the subject.

dangerous, when we listen to sad music we do not go wrong in any sense. This is to say that experiencing something as expressive of an emotion does not amount, most of the times, to take it *as if it were* an animate being: we neither comfort the sad piece of music, nor fear the impetuous one.

More important – and this is our second remark – one might wonder whether psychological results as the ones just quoted actually imply that objects have to *resemble* in some respect humans expressing their feelings, in order to be perceived as animated and, more specifically, expressive. Indeed, data and theories that we have introduced so far in order to offer some support to contour theories do not imply any reference to the experience of resemblance. They rather attest human tendencies to experience our world as intentional and animated.

#### 4 Recognition of Expressions

In what follows, we intend to elaborate on a view of emotions recognition that could help avoid what we consider controversial references to resemblance in the case of expressive music.

Most authors agree that emotions are better identified as complex patterns of heterogeneous components, rather than by a unique, necessary feature (e.g., Izard et al. 2000; Scherer 2009; Newen et al. 2015; Barrett et al. 2016). Among these components are physiological reactions, tendencies to action, bodily and facial expressions; moreover, emotions are usually said to possess intentional objects, towards which they are directed with axiological attitudes. The list is not limited to such features, but this should suffice to realize that at least some of them can be recognized perceptually when instantiated by others, especially the expressive components.

In order to do justice to what contour theorists claim to be a basically perceptual experience, we shall stand by those theories according to which we tend to recognize emotions of others by means of a perceptual process. The characterization of the implied perceptual process, however, is much debated both by psychologists and by philosophers, so that we need to take a stance on this issue, although a quite general one.

Newen et al. (2015), for instance, claim that we mostly have access to others' emotions thanks to a perceptual process, having typical emotions patterns as its object. According to their view, the mechanism by which we recognize emotions is analogous to the process of objects' recognition, namely a perceptual process that can be cognitively integrated. They argue that the recognition of emotions consists in a bottom-up process activated by sensory cues leading to a first sensory estimate; then, a top-down process allows for a cue integration, say, the weighting of redundant information to exclude irrelevant features, and for the development of a stable percept. Such percept is what justifies most of our attributions of emotions to other sentient beings.

Along the same line, Marchi and Newen (2015), developed an account for the perceptual recognition of emotions expressed by human faces that appeals to the notion of cognitive penetration. They want to explain how low level sensory cues end up in a rather complex percept such as an expressive face. According to their view, our background knowledge about emotions intervenes in the perceptual process, integrating the sensory cues and resulting in the specific content of perception.



If most authors, including us, would agree on the general perspective of a mostly bottom-up perceptual recognition of facial and bodily expressions, it is worth remarking that the way in which concepts and background knowledge intervene in such perceptual experience is far from being uncontroversial.

Adopting a different perspective, Ned Block (2014) has provided evidences that facial expression recognition is a case of perceptual recognition of patterns that does not require the intervention of concepts. He introduces a useful taxonomy of the kind of properties that we perceive and their alleged relation with cognitive interventions. Far from denying that concepts can intervene and modify what he calls *secondary seeing* – which indeed “involves states that put together perception with perceptual judgment” (Block 2014, p. 566) – he claims that *primary seeing* is not permeated by concepts. It only applies to low level features such as “shape, spatial relations (including position and size), geometrical motion, texture, brightness and color” (Block 2014: 560), and to higher level patterns such as facial expressions (as well as gender, race and individual identity, his main experimental references coming from Butler et al. (2008)). Such higher level properties are intended to overlap with the underlying low level perceptual features, but the integration of the latter into the former is not taken to require any conceptual intervention.

Marchi and Newen refer to a notorious experiment taken forward by Carroll and Russell (1996) in which contextual information was supposed to influence the way in which presented facial expressions were perceived. In particular, participants were told a story about the situation in which the shown ambiguous facial expressions were displayed. The experiment had been explicitly realized to undermine the idea that facial expressions can *per se* be recognized as expressive of a specific emotion. Indeed, according to the authors, the face provides information that is relevant to the recognition of emotions but does not signal any specific emotion. Marchi and Newen take the fact that previous beliefs influence our responses to ambiguous facial expressions to be the evidence that facial recognition is sensitive also to higher level conceptual knowledge.

In the light of these exemplified opposing perspectives, we intend to endorse a view that takes the content of expressions recognition to be quick, automatic and (relatively) encapsulated (for the origins of such view see Fodor 1983). We are indeed prone to accept some conceptual intervention from domain-specific concepts about emotions and the way in which they are expressed by humans. And we do not aim at putting forward any strong claim about a radical cognitive impenetrability of facial expression perception. However, we buy from Block the idea that certain low level features most of the times do not need to be conceptually integrated in order to be recognized as facial expressions. There may be ambiguous situations in which further knowledge is required in order to recognize a display of perceptual features as an expression, e.g., of anger. But this does not amount to claim that the widespread experience of facial and, more generally, manifest emotions recognition requires some background knowledge in order to take place.

Indeed, what we need to say at this stage of our argument is that certain emotional expressions that are typically instantiated by humans, can be recognized perceptually, that is, as gestaltic features whose expressiveness does not depend on our capacity to draw inferences from or to beliefs.



We can now draw a provisional conclusion bridging the recognition of facial (and bodily) emotional expressions and the recognition of musical expressiveness to which contour theory appeals. As well as facial and bodily expressions, musical contour is a perceivable pattern allegedly constituted by lower level features. Consistently, what Stephen Davies has named *emotion characteristics in appearance*, that is, the perceivable expression of felt emotions, can be presented in our perceptual experiences without any implicit reference to other, constitutive components of what we call emotions. In other words, in order to perceive and recognize *emotion characteristics in appearance* we do not need to draw inferences neither to the possible formal (or intentional) objects of the expressed emotion, nor to its typical feelings, nor to the action (and reaction) tendencies typically connected to it.

And if cognitive inferences relating perceptual features to a psychological state are not required to perceive an expression as expressive, then the need to appeal to the similarity (conscious or unconscious) between actual affective human expressions and musical “merely perceptual” expressiveness turns out to be unjustified. Indeed, if expressive patterns can be recognized also in the absence of any reference to what, in the central case of human expression, causally generates expressions, then a similar claim can be made for the case of inanimate things.

## 5 Back to Music

This strategy is consistent with contour theory. Indeed, it claims that perceivable features instantiated by human behaviors are sufficient for recognizing expressions of emotions. If so things stand, and if such recognition is rooted in a perceptual experience that mobilizes neither complex mechanisms nor specific expertise, then nothing should prevent from extending it to inanimate entities.

We consistently experience a piece of music as expressive of an emotion in virtue of those features that we perceive as expressive components of that emotion. Indeed, what contour theory rejects of other theories of musical expressiveness is their need to appeal to mental states and processes that our phenomenal experience does not seem to involve, like imagination or associative mechanisms. According to contour theorists, there is no need to postulate such processes if it is possible to account for expressiveness by means of perception.

Moreover, if the model we have sketched is viable, even the appeal to resemblance turns out to be superfluous. Perceptual properties of music that make it expressive need not be compared with facial expressions or behavioral manifestations of emotions to be experienced as expressive: certain perceivable features can indeed belong to the articulated pattern of emotions independently of their being instantiated by human, animate beings or by objects such as pieces of music. If what we perceive when we detect emotions of others are perceptual features like visual and auditory *Gestalten*, we argue that if music presents some of these features, it can be experienced as expressive. And we recognize it as expressive, rather than in virtue of some detected resemblance.

In other words, we do not need to be able to recognize a resemblance holding between a sad piece of music and a sad behavior: they are both recognizable as

expressive of sadness as far as they instantiate certain perceivable features that belong to the heterogeneous cluster of components that constitute sadness and that we are capable of detecting. In a slogan, we could say that resemblance is *in re* rather than being a predicate to be attributed *de re*.

Notice that, while the position we are defending is definitively conflicting with some statements put forward by contour theorists (see Section 2), it is compatible with other passages, notably by S. Davies: “Expressiveness of music depends mainly upon a resemblance we perceive between the dynamic character of music and human movement, gait, bearing, or carriage” (Davies 1994, p. 229). In this quotation, Davies makes reference to the similarity that listeners perceive, which does *not necessarily* correspond to a perception of similarity. We suspect that, in stressing the relevance of similarity, contour theorists have not provided satisfactory arguments for those cases in which similarity is clearly not the object of our perception.

So far, we have claimed that musical contour and typical emotion expressions can share perceptual patterns. Expressive music instantiates (at least some of) the very same features that can be perceptually recognized as belonging to typical expressions of emotions. Such perceptual properties are those to which our expressive attributions are anchored, when referring both to humans and to music. Unlike contour theory, but precisely in order to stress its idea that music can be sad *in the same way* a behavior or a facial expression are,<sup>6</sup> we insisted that there is no need to appeal to those resemblances that may exist between them (and which might certainly be recognized *post hoc*). Instead, we have claimed that the perceptual recognition of expressive patterns can occur regardless of any reference to the – allegedly central – case of human expression. We tend to recognize certain patterns as animated and, as far as they are perceivable components of certain emotion clusters, as expressive.

It seems that the above mentioned contributions from psychology and theories of emotions can enhance the contour theory and undermine its appeal to resemblance as unnecessary. We suggest that the so-amended contour theory might offer a good explanation of the expressive experience of music, that is the experience of expressive patterns of auditory properties.

Now, if this account is viable for auditory properties, in principle nothing should prevent from an attempt to extend it to other kinds of sensory properties, namely visual ones.

In this next section we try to push our claim further, and we wonder whether the so amended contour theory could be extended to a peculiar visual experience, namely the exemplar case of depicted landscapes.

## 6 Depicted Landscapes

After all, there is nothing strikingly new in suggesting that inanimate objects that we see can be described as expressive, analogously to what happens with music. A situation might be mournful, an atmosphere might be gay, circumstances very sad, landscapes

<sup>6</sup> Despite being likely to display a limited range of behavioral attitudes, we do not believe that music is expressive in a *sui generis* way; indeed, to the extent that such attitudes are concerned, they do belong to the same expressive patterns of human emotional attitudes. We would like to thank an anonymous reviewer for stressing this point.

melancholy. At first glance there is no reason to believe that these examples deserve an ad hoc explanation, radically distinct from those provided for musical expressiveness. Still, it can be said that situations, atmospheres and circumstances are too undefined objects and that they are inherently constituted by those persons who people them, determining their affective character. In order to focus our inquiry on an expressive object that, unlike what could be thought about atmospheres and situations, does not imply the occurrent affective states of living subjects, we will concentrate on the example of landscapes, namely depicted ones.

As in the case of music, what sounds interesting for the purpose of an account of expressiveness is the perceptual configuration that makes so that an inanimate object is experienced as expressive of affective states. And depicted landscapes are inanimate, visual, objects, characterized by observable features such as colors, shapes, arrays of different items displayed in the visual field.

Setting aside for the time being issues concerning the origins and also the artistic implications of depicted landscapes, it could be useful to focus on some concrete examples. First, we can consider one out of the several landscapes painted by Caspar Friedrich during the XIX century: *Der Nachmittag* (1821–22). Without appealing to any specific expertise, we would describe it as somber, sad, melancholy, but also quiet and peaceful, and we would consider certain visible properties as responsible for such expressive characters: the grey sky occupies almost half of the canvas, and shades of grey dominates two thirds of the painting; the horizon line is slightly wavy, and dark tones of brown and green color the fields, giving the impression of being pressed by the incumbent sky. On the other hand, consider David Hockney's *Wheatfields off Woldgate* (2006). The picture is lively, gay and cheerful, these qualities being conveyed by bright, intense and contrasting colors and by the broken lines shaping the fields and crossing the lowest part of the canvas.<sup>7</sup>

Expressive features seem to be anchored in merely perceptual features of depicted landscapes, but cannot be reduced to them, and it is the gestaltic articulation of such perceptual features that apparently is experienced as expressive of gaiety or of sorrow. However, although limited to the phenomenal level of expressive experiences, these trivial descriptions are not enough. For our proposal to be credible and to represent a consistent extension of an amended and enriched contour theory, it should be possible to individuate at least some expressive perceptual patterns that can be perceived both in landscapes and in humans.

## 7 Time and Dynamism

While much has already been done concerning music, landscapes and other static paintings deserve further explanations as to their expressive characters.

Since we started reasoning about expressiveness facing the case of expressive music, a first problem is represented by the static nature of paintings if compared to sounds. In particular, depicted landscapes seem to lack the time-unfolding agency that we have

<sup>7</sup> The trivial fact that the same scene can be represented in ways that differ so much from one another conveying contrasting expressive values, dispels the idea that expressive qualities depend more on what is represented than on how it is represented.

seen characterizes the expressive profile of music. This makes the identification of the perceptual patterns that should ground expressive attributions to paintings harder. It is obviously true that music is expressive of certain emotions in virtue of its alternating tension and relaxation taking place along time (Meyer 1956). Music is said to move, sounds go high or low, and according to contour theory it deploys in time displaying the typical profile of expressive behaviors. Thus, it seems rather uncontroversial that music can express a wide range of emotion manifestations, both long lasting and episodic, developing and changing in time.

What about landscapes? The experience of a sad sunset does not seem to present an analogous unfolding in time of its expressive features. It surely “takes time” to accurately describe the expressive potential of *Der Nachmittag*. Nonetheless, the experience of a painting radically differs from the auditory experience of a piece of music as for time. If we considered time as an inherent property not only of music, but also of the perceptual experience of expressive properties in general, then we would have hard times in applying the contour theory to visual experience of static objects.

However, from the perceptual perspective that we have adopted following the contour theory, we are not forced to make such a move. Take a sad facial expression: it is expressive of sadness despite being static, and we can perceptually recognize it even if it does not unfold in time as pieces of music (and expressive movements) do. Analogously, the typical posture of a sad person need not unfold in time, it is rather constituted by vectors and slopes that *tend* towards the ground rather than upwards. This supposedly shows that at least certain expressive components of emotion patterns do not unfold in time.

When introducing contour theory, Davies himself puts forward as examples of expressive figures the static images of a weeping willow and of a basset hound, while clarifying that time is relevant to music *qua* temporal art: “Because music is a temporal art, its expressive character is revealed only gradually and can be heard only through sustained attention to its unfolding. It takes as long to hear the music’s expressive properties as it takes to hear the passages in which those properties are articulated” (Davies 2005c, p. 181, emphasis added), and “In the case of music, this [expressive] ‘appearance’ depends on its dynamic topography, as this unfolds through time” 2005c, p. 181, emphasis added). But he also says that: “Music, like behavior, is dynamic. It is a straightforward fact about hearing that two notes an octave apart are heard as ‘the same’ and that notes are heard as relatively high or low” (2005b, p. 140, emphasis added).

Thus, rather than being a counterexample to our tentative extension of contour theory to pictorial landscapes, the very fact that even those objects that do not change nor develop or move in time are experienced as expressive, suggests that development along time is not necessary for something to be expressive. More precisely we are suggesting that time, which is obviously a *necessary* element for the *existence* of music, is not *constitutive* of music expressed *emotions*. Rather, it is an element which *enriches* the palette of musical emotions, rendering their tones brighter.<sup>8</sup>

<sup>8</sup> Davies (2005b) convincingly argued that music, being not able to *feel* emotions, is expressive of states which are not directed to anything (in formal terms, music emotions have no formal object). Consequently, it is plausible that music can only be expressive of basic and generic emotions. Nevertheless, if we are right, its temporal development could render the manifestations more intense, the contour more convincing - while a successive imaginative process could also enlarge the very set of possible emotions (Levinson 1990, 1996).

Nevertheless, if in pictorial art temporality is not what makes perceptual properties expressive, we still need to provide an explanation for the fact that also depicted landscapes can be expressive of emotions. As *Gestalten* that can be instantiated by human expressions of emotions as well as by music and other inanimate objects, we suggest that expressive properties are intrinsically dynamic, and that dynamism is not strictly temporal. We pattern the notion of dynamism after Daniel Stern's (2010) studies and his proposal about the temporality of vitality forms. Despite Stern's repeated stress on the effective temporal development of forms, we believe that vitality forms have and transmit dynamic information intrinsically, sometimes even instantaneously, say, independently of their unfolding in time.

The kind of temporality in place in the recognition of vitality forms and thus in an important component of emotions consists in a phenomenological, lived time that unfolds in the present moment of the experience. What Stern calls *vitality contours* "are made up of the instant-by-instant patterns of shifting intensity and hedonic tone over time, as occasioned by internal or external events. [...] They are analogic time contours that are best captured by dynamic kinetic terms, such as *surging, fading away, fleeting, explosive, tentative, effortful, accelerating, decelerating, climaxing, bursting, drawn out*, and so on." (Stern 2000, p. 25).

These dynamic kinetic terms offer a significant handhold for our proposal. If we can appeal to such dynamism of expressive properties as to the feature that makes them suitable for expressing emotions, then a so conceived notion of time does not represent an obstacle to the extension of the musical contour theory to visual experience: it can be said that the soft lines constituting *Der Nachmittag* are of a piece with the pattern of melancholy – which in turn involves qualities that are typical of quietness and sorrow – as well as its gradually declining shades of colors, and this is why the composition can be perceived as expressing melancholy. Friedrich's painting is static and this feature is conveyed by gradual chromatic shifts, a quite limited range of color variations, the wavy slope of lines; consistently, stasis and limited disposition to action as well as slowness in movements are typical *characteristics in appearance* of sad behaviors. And despite clearly sharing some compositional features with *Der Nachmittag*, Hockney's *Wheatfields off Woldgate* exhibits sharper chromatic contrasts, radical shifting from a shade to another, and more dynamic lines (brush strokes) producing the overall impression of more rapid changes. These features seem to be quite consistent with the expressive patterns of gaiety and liveliness, say, as well as in music the major mode convey some *characteristics in appearance* of happiness, such exemplified visual features do the same for the case of paintings.

Thus, we claim that if certain audible patterns are what makes music expressive due to their being common to expressive behaviors, then also in the case of landscapes we can point at some visible patterns of perceptual features in order to justify their expressiveness.

And if one is disposed to follow us up to this point, then the question quite naturally will arise of why limiting expressiveness to compositions, both musical and pictorial. If what is required for a perceptual property to be expressive is its being dynamic and a perceptual component of an emotion pattern, then we should try to see to what extent we can apply our view to lower level perceptual features.

## 8 Low Level Expressive Features

Contour theorists are interested in the experience of music as a whole, as well as one can legitimately be interested in accounting for the experience of depicted landscapes as a whole. But if the unfolding in time is not a necessary character of expressive experience, then why should we claim that only a complex composition of low level features, such as a piece of music and a whole painting, can be experienced as expressive of emotional or psychological states? Why couldn't we acknowledge that also less articulated features, such as shapes, lines and chords, whose experience is not relevantly temporal, can be perceived as expressive?

If one is disposed to agree with a theory of human expression recognition that does not imply the intervention of concepts in the first place, but that allows for the possibility to perceive expressions of emotions in virtue of some typical patterns (and this, as we have seen, in virtue of modular systems of detection as well as of acquired knowledge culturally enhanced), then the same argument could apply to simple features that are (or can become) part of those patterns.

To take some trivial examples, being nonetheless pretty faithful to phenomenology, grey is sadder than red, which in turn is more arrogant than light blue. Analogously, in the musical domain, minor chord is sadder than major chord.

Moreover, always in the field of music, evidence from psychology has been provided that also low level components of more complex expressive patterns are per se expressive, at least to a minimal extent. Moved by an interest in the phenomenological dimension, Patrik Juslin (2011; Juslin et al. 2010) proposed a multi-componential model of music experience, in which seven computational mechanisms trigger seven different kinds of emotional experiences: brain stem reflex, rhythmic entrainment, evaluative conditioning, emotional contagion, visual imagery, episodic memory, musical expectancy. These mechanisms are not specific to music - albeit together they probably are. Some of them have most likely been selected for extra-emotional reasons (paradigmatically, this is the case of episodic memory), while others have probably been selected for their rapidity and reliability in triggering responses to emotional stimuli in everyday life, and only later recruited also in music experience. The only exception could be the domain-specific mechanism for musical expectancy.

On the side of vision and visual expressive patterns, Gestalt psychology has famously shown how dynamic effects can be created with simple oriented figures. Mainly interested in paintings and pictorial techniques, Rudolf Arnheim developed a theory for the perceptual experience of visual art, focusing on what he considered the essential feature of every visual object, say, its dynamism. And to the extent that dynamism is a crucial element also in our argument for emotion perception, it is useful to follow Arnheim's discourse in some detail.

Rejecting the view that perceived dynamism conveyed by static images is a perceptual illusion, he claims that dynamic forces ("oriented tensions") are inherent to images at a very elementary level and that painters and artists are supposed to handle them in order to realize dynamic (and subsequently, on his view, valuable) works. Relying on a vast range of artistic examples, Arnheim claims that "Obliqueness is perceived spontaneously as a dynamic straining toward or away from the basic spatial framework of the vertical and horizontal" (Arnheim 1974, p. 425). Also, and as a matter of fact, "Baroque architecture used the dynamics of curved shapes to increase tension" (Arnheim 1974, p. 428). And just to quote some more examples concerning compositional and formal features of paintings:



distortion of shapes (ovals rather than circles, rectangles rather than squares), the interval between compositional elements, the more or less symmetrical relation between them, up to the visual occlusion of certain portions of a figure can, if duly handled, create and enhance perceivable dynamism of static figures.

In a vein that is consistent with Arnheim's view, and especially with his considerations about obliqueness, a recent experimental result correlates low level perceptual features such as simple geometrical forms and their inclination, with stereotyped facial expressions. We would consider it a symptom of the fact that even in the core and most genuine case of expressiveness (i.e. the one in which it is instantiated by a facial emotional expression) low level perceptual features have a measurable influence on what is actually recognized.

By presenting to the participants stereotyped facial expressions (joy, surprise, fear, suffering, disgust, and anger) represented on triangles and ovals with different degrees of inclination, Pavlova et al. (2005) found that the perceived instability of the geometric figure, due to its inclination, positively correlates with the intensity of negative emotions, such as fear and suffering, that are detected by the observers. By contrast, the depicted emotions of joy and surprise negatively correlates with the physical deviation of the faces from vertical orientation, say, to their perceived instability. In short: the more inclined the figures are, the more intense the expressions of fear and anger are rated; the less inclined the figures are, the more intense the expressions of joy and surprise are rated.

Besides confirming that static images are often perceived as dynamic, this experiment shows that very low level perceptual features such as lines, shapes and their inclination have an influence on the intensity of the perceived expressed emotions. In particular, as the authors write, such results: "provide the first experimental evidence in favor of the assumption that perceived dynamics conveyed by static images leads to specific emotional attribution." (Pavlova et al. 2005, p. 1113).

The provisional conclusion that we would draw is that very low level perceptual features such as shapes and inclination importantly determine the expressive characters of paintings (and, allegedly, of other visual objects) in virtue of their minimally expressive nature. Dynamism of low level features is indeed inherently connected to expressiveness to the point that it is hard to establish a minimal level of complexity required for a shape to be expressive per se. On the one hand we suspect that, as well as in the case of music, it might be an empirical issue to establish the degree of perceived expressiveness of low level visual features. In particular, further research might focus on the possibility to distinguish between those features that are merely causally responsible for certain affective reaction, and those which can be considered constitutive of the experienced expressiveness. On the other hand, it could be a definitional issue to establish whether perceived dynamism is to be considered an expressive quality of low level features, or if its connection with affective states is too loose to allow for such definition. However, if the latter were the case, then our proposal could still appeal to a componential model for emotions and expressions recognition according to which certain low level dynamic features are more liable to belong to certain (although a wider and less specific) range of emotions, rather than to another.<sup>9</sup>

<sup>9</sup> We would like to thank Alberto Voltolini for raising this issue. We are especially grateful to him for putting forward the useful distinction between features that causally contribute to expressive experience, and features that are experienced as expressive. However, for now, we will limit to suggest that, although the distinction is not clear, it seems that also very low level features such as colors, lines and chords, are not mere causes of affective reaction, but can rather be experienced as expressive per se.

## 9 Conclusions

To sum up: we believe that our proposal might enrich the contour theory. We experience music as well as landscapes (and possibly many other objects) as expressive in virtue of the perceptual features that constitute their contour, making them similar to human expressive manifestations. Unlike contour theorists, we claim that resemblance is not necessarily the relation in virtue of which we undergo such experiences. In the case of music, its unfolding in time is a specific feature of its expressive character that makes it capable of expressing a wide and articulated range of emotions, both episodic and long lasting. The case of depicted landscapes makes it clear that time-unfolding agency is not necessary for something to be expressive of an emotion. What ultimately makes them expressive are dynamic patterns of perceptual features such as the slope of lines and the juxtaposition of colors.

More explicitly than the example of music, the case of expressive visual features of depicted landscapes shows that it is not always possible to individuate any salient resemblance holding between an expressive landscape and a behavior. To explain this case of expressiveness, we resorted to liberal views on emotions, claiming that emotions are complex clusters of heterogeneous features. This perspective paves the way to the view that emotions can be instantiated and perceived even when nobody is feeling and intentionally expressing them. The instantiation of certain features, belonging to typical emotions expressions, can be enough to recognize expressiveness both in humans and in objects, without necessarily recognizing any resemblance.

Finally, our intention is neither to deny nor to underestimate the role of conceptual and imaginative engagement that most experiences of objects' expressiveness may imply. Rather, we claim that the perceptual experience of certain dynamic features is a necessary condition to experience both musical and landscapes' expressiveness. If this holds, not only complex objects such as pieces of music and whole depicted landscapes can be experienced as expressive, but also lower level perceptual features like colors, shapes, lines, chords and notes. It seems reasonable to claim that low level perceptual features are not *neutral* with regard to expressiveness, being most of all responsible for compositions to result expressive of certain, rather than other affective states. We believe that pictorial as well as architectural practices and techniques cannot but confirm this view.

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